Profiling Injuries in Tactical Personnel

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Welcome

Tactical Research Unit

Rapid Fire Mini Symposium


ENGAGE
INFLUENCE
IMPACT
RESEARCH
WEEK
14 - 18 OCTOBER
2019

Profiling Injuries in Tactical Personnel

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INTRODUCTION

- Injuries in Tactical personnel impact on team, partner, mission, public.
- High costs – financial, resource, personnel
- Profiling injuries → informs injury reduction programs

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169.3 (ARA) 301.9 (ARES) / 1000 personnel / year

410 / 1000 personnel / year

177 / 1000 personnel / year

Populations studied

Trades 72/1000 employees/year; Community and Personal Service 69/1000 employees/year; Machinery operators 57/1000 employees/year

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Injuries in Defence

- Risk factor for future injury = prior injury[1]
- Injuries in basic training = career full of injuries
- Injuries during basic training 3x higher than rest of career [2]
- Incidence from 20-59% [3]
- Medical discharge estimated at 8% [3]

Location of Injuries

	ARA		ARES		Combined
Location	**MPI**	**SPI**	**MPI**	**SPI**	
Knee	159 (13.4%)	7 (16.3%)	22 (15%)	0	188 (13.6%)
Ankle	137 (11.5%)	0	12 (8.2%)	0	147 (10.6%)
Lower Leg	123 (10.3%)	0	17 (11.6%)	0	140 (10.1%)
Foot	121 (10.2%)	4 (9.3%)	7 (4.8%)	0	132 (9.5%)
Shoulder	84 (7.1%)	3 (7.0%)	11 (7.5%)	1 (33.3%)	99 (7.2%)
Total	~45%	**14 (of 43)**	~40%	**1 (of 3)**	~44%

Activities causing injury

	ARA		ARES		Combined
Activity	**MPI**	**SPI**	**MPI**	**SPI**	
Physical Training (PT)	502 (42.1%)	10 (23.3%)	47 (32%)	1 (33.3%)	560 (40.4%)
Combat Training	247 (20.7%)	7 (16.3%)	40 (27.2%)	0	294 (21.2%)
Marching	117 (9.8%)	3 (7.0%)	16 (10.9%)	0	136 (9.8%)
Unknown	112 (9.4%)	13 (30.2%)	17 (11.6%)	2 (66.6%)	144 (10.4%)
Walking	54 (4.5%)	3 (7.0%)	6 (4.1%)	0	63 (4.6%)
Total	**1032 (of 1192)**	**36 (of 43)**	**126 (of 147)**	**3 (of 3)**	**1197 (of 1385)**

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Populations studied

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Location of Injury	
Shoulder	20.0%
Leg	13.3%
Knee	11.2%
Back	10.8%
Arm	7.8%
Ankle	7.3%
Wrist	7.3%
Neck	5.5%

Nature of Injury	
Sprain/Strain	50.9%
Muscle/Tendon/Nerve	32.2%
Bruise/Graze	4.1%
Other/unknown	3.7%
Fracture/dislocation	3.0%

Mechanism of Injury	
Muscle stress with physical exercise	31.0%
Repetitive stress or forceful movements to muscle or joints	15.1%
Muscle stress – lifting or handling people or objects	12.2%
Hitting an object, animal or person	11.5%
Slip, trip or fall from same height	7.6%
Unknown/other	7.1%

Activity	
Unknown/other	256 (45.4%)
Police training	215 (38.1%)
Physical competency test	29 (5.1%)
Walking/running	29 (5.1%)

Populations studied

Unpredictable Environment with poor visibility

Exposure to environmental heat

Wearing occupational load

Victim rescue

Confined Spaces

Location – Lower extremity and back

Nature – Sprains and Strains

Mechanism – Slips, Trips and Falls

Activity - General activities around fire station

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Reduction of Injuries

- Reducing injuries comes from understanding injuries and high risk activities [8]
- Exposure to chronic conditioning
- Ability to train specificity
- Optimising fitness, strength and body composition ($$$)
- Full rehabilitation of previous injury
- Notion of the '*Tactical Athlete*'
- Shift work, minimal rest time, no offseason, task focussed, load carriage, nutrition.

Tactical Athlete: TACTICAL ATHLETE

THE TACTICAL ATHLETE

Tactical Athlete
Special Interest Group

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SUMMARY

- Injury reduction programs vital for tactical personnel
- Job tasks unique in each occupation
- Each domain unique in its injury profile
- Profiling is a vital first step!
- Tactical organisations need research and funding

Current Projects

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Future Projects

- Female vs Male Injuries
- Anatomical, biomechanical & anthropometrics
- Equipment fitting

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